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| 10/608,628 | 06/27/2003 | Ajay Rajkumar | 7650-0021 | 8462 |
| 51094 7590 08/13/2007 MCCORMICK, PAULDING & HUBER LLP 185 ASYLUM STREET CITY PLACE II HARTFORD, CT 06103 | | | EXAMINER CHOU, ALBERT T | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/608,628

Applicant(s)

RAJKUMAR ET AL.

Examiner

Albert T. Chou

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 12 July 2007 for the amendment.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. The following is a response to the amendment filed on July 12, 2007:
 - Claims 1-22 are pending in the application.
 - Claims 1-8, 10-18 and 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 7,002,993 to Mohaban et al. (hereinafter "Mohaban") in view of US Patent Application Pub. No. 2003/0091017 A1 by Davenport et al. (hereinafter "Davenport").
 - Claims 9 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 7,002,993 to Mohaban, in view of US Patent Application Pub. No. 2003/0091017 A1 by Davenport, and further in view of US Patent No. 6,839,356 to Barany et al. (hereinafter "Barany").

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-8, 10-18 and 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 7,002,993 to Mohaban et al. (hereinafter "Mohaban")

in view of US Patent Application Pub. No. 2003/0091017 A1 by Davenport et al.
(hereinafter "Davenport").

Regarding claims 1 and 15, Mohaban teaches a transmitting communication equipment **[Fig. 2; VoIP POP 215]** and a method of transmitting information comprising:
an aggregator **[Fig. 2; A VoIP POP with Aggregator 219/Swtich 222/VoIP Gateway 220]** for aggregating information based on user service requirements **[Fig. 2; aggregated media packets received from IP Phone, Workstation 227 or PSTN Phone 225 based on time-delay requirements for VoIP, streaming media, etc; col. 4, lines 15-20, 38-46, 52-57]** and for transmitting the aggregated information **[Fig. 2; Transmitting aggregated information to IP WAN 217]** as an aggregated packet to a receiving communication equipment **[Fig. 2; VoIP POP 215 receives an aggregated packet from IP WAN 217]**, said receiving equipment having a de-aggregator for de-aggregating the aggregated packet **[Fig. 2; VoIP POP 215 de-aggregates the aggregated packet and forwards IP Phone 223, Workstation 227 and PSTN Phone 225 based on time-delay requirements for VoIP or streaming media; col. 4, lines 15-20, line 67 – col. 5, line 4]**,

wherein a size of the aggregated packet is based at least in part on an aggregation protocol between the transmitting communication equipment and the receiving communication equipment **[col. 3, lines 30-46; col. 4, lines 38-46; Fig. 2; VoIP POP 215 retrieves and aggregates the information based on a pre-configured media packet length threshold; col. 5, liens 13-24]**.

Mohaban does not expressly teach a size of the aggregated packet is based on a negotiation between the transmitting communication equipment and the receiving communication equipment.

Davenport teaches a size of the packet is based at least in part on a negotiation between the transmitting communication equipment and the receiving communication equipment **[Abstract: The packet size is selected in response to the communication link quality, a service requirement; Fig. 2, steps 46-52; pars. 0016, 0019, 0021, 0022]**.

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Mohaban's aggregation/de-aggregation protocol by incorporating the capability of packet size selection or negotiation between the transmitting and the receiving devices based on the service requirements, such as the communication link quality, as taught by Davenport.

The motivation for combining the reference teachings would allow a VoIP POP to aggregate/de-aggregate the size of packets not only based on the packet header/payload compression but also on the user service requirements, such as the communication link quality.

Regarding claim 2, Mohaban, in view of Davenport, teaches the size of the aggregated packet is based at least in part on channel conditions of a communication channel used for transmitting the aggregated packet between the transmitting

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communication equipment and the receiving communication equipment **[Abstract: The packet size is selected in response to the communication link/channel quality, a service requirement; Fig. 2, steps 46-52; pars. 0016, 0019, 0021, 0022].**

Regarding claim 3, Mohaban, in view of Davenport, teaches the channel conditions are monitored on an ongoing basis during communications between the transmitting communication equipment and the receiving communication equipment **[Abstract, communication link quality at the location of the mobile asset is measured at the time of the data exchange; Data packet size may be made responsive to a real-time and predetermined communications link measurements ;par. 0023]**; and

a size of each of a plurality of aggregated packets transmitted from the transmitting communication equipment to the receiving communication equipment is based at least in part on the channel conditions at the time when the aggregated packets are generated **[Abstract: The packet size is selected in response to the communication link quality, a service requirement; Fig. 2, steps 46-52; pars. 0016, 0019, 0021, 0022].**

Regarding claim 4, Mohaban teaches the aggregator has an input for coupling to a first buffer **[Fig. 2; The Aggregator 219 is coupled to Switch 222 and VoIP Gateway 220. A buffer is inherent in Switch 222 and VoIP Gateway 220 in order**

for aggregating packets received from IP Phone, Workstation 227 or PSTN Phone 225] and;

the first buffer receives information from a terminal equipment from which said first buffer retrieves the information if the transmitting communication equipment operates in a terminal mode **[Fig. 2; VoIP POP 215 retrieves and aggregates the information based on a pre-configured media packet length threshold; col. 5, lines 13-24]** and the first buffer receives information from equipment other than the terminal equipment if the transmitting communication equipment operates in a relay mode **[Fig. 2; based upon expiration of a pre-selected maximum delay time value, not at a fixed rate; col. 5, lines 25-29]**.

Regarding claim 5, Mohaban teaches the first buffer retrieves the information in accordance with time delay requirements of the information **[Fig. 2; A voice/RTP packet is the delay-sensitive/real-time information]**.

Regarding claim 6, Mohaban teaches the aggregated information from the aggregator is fed to a second buffer **[Fig. 2; A buffer is inherent in Router 221]** coupled to an output of the aggregator for outputting the information in accordance with time delay requirements of the information **[Fig. 2; Router 221 routes aggregated media packets received from IP Phone, Workstation 227 or PSTN Phone 225 based on time-delay requirements for VoIP, streaming media, etc; col. 4, lines 15-20, 38-46, 52-57]**.

Regarding claim 7, Mohaban teaches the user service requirements are related to quality of service provided to users of a communication system within which the equipment is being used **[Fig. 2; User service requirements for IP Phone, Workstation 227 or PSTN Phone 225 are related to time-delay requirements provided by the VoIP POP 215; col. 4, lines 15-20, 38-46, 52-57].**

Regarding claim 8, Mohaban teaches the information comprises real time information **[Fig. 2; a voice/RTP packet is the real time information].**

Regarding claim 10, Mohaban teaches a receiving equipment comprising:

A de-aggregator **[Fig. 2; VoIP POP 215 receives data from IP WAN 217]** for de-aggregating aggregated data packets received from a transmitting communication equipment **[Fig. 2; VoIP POP 215 transmits data to IP WAN 217],**

wherein a size of the aggregated packet is based at least in part on an aggregation protocol between the transmitting communication equipment and the receiving communication equipment **[col. 3, lines 30-46; col. 4, lines 38-46; Fig. 2; VoIP POP 215 retrieves and aggregates the information based on a pre-configured media packet length threshold; col. 5, lines 13-24].**

Mohaban does not expressly teach receiving communication equipment negotiates with the transmitting communication equipment for determining a size of one

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or more of the aggregated data packets, said aggregated data packets being information aggregated based on user service requirements.

Davenport teaches receiving communication equipment negotiates with the transmitting communication equipment for determining a size of one or more of the aggregated data packets, said aggregated data packets being information aggregated based on user service requirements **[Abstract: The packet size is selected in response to the communication link quality, a service requirement; Fig. 2, steps 46-52; pars. 0016, 0019, 0021, 0022]**.

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Mohaban's aggregation/de-aggregation protocol by incorporating the capability of packet size selection or negotiation between the transmitting and the receiving devices based on the service requirements, such as the communication link quality, as taught by Davenport.

The motivation for combining the reference teachings would allow a VoIP POP to aggregate/de-aggregate the size of packets not only based on the packet header/payload compression but also on the user service requirements, such as the communication link quality.

Regarding claim 11, Mohaban teaches the de-aggregator transfers information from the de-aggregated aggregated data packets in accordance to time delay requirements of the information to a terminal equipment, if the receiving communication equipment operates in a terminal mode **[Fig. 2; VoIP POP 215 transfers the de-**

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aggregated information based on time-delay requirements for VoIP, streaming media, etc, to PSTN Phone 225; col. 4, lines 15-20, 38-46, 52-57], and the de-aggregated information is transferred to equipment other than terminal equipment if the receiving communication equipment operates in a relay mode [Fig. 2; the de-aggregated information is transferred to IP Phone 223 and Workstation in a relay/switching mode].

Regarding claim 12, Mohaban teaches the de-aggregator has an input for coupling to a first buffer **[Fig. 2; A buffer is inherent in Router 221 which is coupling to the input of (De-) Aggregator 219]** and an output for coupling to a second buffer **[Fig. 2; The (De-) Aggregator 219 is coupled to Switch 222 and VoIP Gateway 220. A buffer is inherent in Switch 222 and VoIP Gateway 220 in order to transfer the de-aggregated packets to IP Phone, Workstation 227 or PSTN Phone 225 based on time-delay requirements for VoIP or streaming media; col. 4, lines 15-20].**

Regarding claims 13 and 22, Mohaban teaches the de-aggregator **[Fig. 2; VoIP POP 215]** provides information from the de-aggregated aggregated data packets to the second buffer for outputting such information in accordance with the time delay requirements of the information **[Fig. 2; The (De-)Aggregator 219 is coupled to Switch 222 and VoIP Gateway 220. A buffer is inherent in Switch 222 and VoIP Gateway 220 in order to transfer the de-aggregated packets to IP Phone,**

Workstation 227 or PSTN Phone 225 based on time-delay requirements for VoIP or streaming media; col. 4, lines 15-20].

Regarding claim 14, Mohaban, in view of Davenport, teaches the size of the aggregated packet is based at least in part on channel conditions of a communication channel used for transmitting the aggregated packet between the transmitting communication equipment and the receiving communication equipment **[Abstract: The packet size is selected in response to the communication link/channel quality, a service requirement; Fig. 2, steps 46-52; pars. 0016, 0019, 0021, 0022].**

Regarding claim 16, Mohaban, in view of Davenport, teaches at least one of the receiving node and the transmitting node monitors channel conditions of the communication channel **[Abstract: The packet size is selected in response to the communication link/channel quality, a service requirement; Fig. 2, steps 46-52; pars. 0016, 0019, 0021, 0022]; and**

the size of one or more of the plurality of aggregated data packets is based at least in part on the monitored channel conditions **[Abstract: The packet size is selected in response to the communication link/channel quality, a service requirement; Fig. 2, steps 46-52; pars. 0016, 0019, 0021, 0022].**

Regarding claim 17, Mohaban, in view of Davenport, teaches the size of each aggregated data packet is determined based at least in part on the channel conditions

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at the time when the aggregated data packet is generated **[Abstract, communication link quality at the location of the mobile asset is measured at the time of the data exchange; Data packet size may be made responsive to a real-time and predetermined communications link measurements; par. 0023]**.

Regarding claim 18, Mohaban teaches buffering the aggregated data packets, wherein the buffered aggregated data packets are outputted in accordance with timing delay requirements of the aggregated data packets **[Fig. 2; It is inherent in Mohaban that VoIP POP 215 and Router 215 buffer the aggregated information. Router 221 routes aggregated media packets based on time-delay requirements for VoIP, streaming media, etc; col. 4, lines 15-20, 38-46, 52-57]**.

Regarding claim 20, Mohaban teaches a method for communicating information over a communication channel, the method comprising the steps of:

receiving a plurality of data packets at a transmitting node, said data packets being associated with an end user **[Fig. 2; VoIP POP 215 aggregates data packets received from IP Phone 223/Workstation 227]**;

aggregating at least a subset of the plurality of data packets into an aggregated data packet **[Fig. 2; A transmitting VoIP POP 215 aggregates data packets from IP Phones 223/Workstation 227 into an aggregated data packet]**, wherein a size of the aggregated packet is based at least in part on an aggregation protocol between the transmitting communication equipment and the receiving communication equipment

[col. 3, lines 30-46; col. 4, lines 38-46; Fig. 2; VoIP POP 215 retrieves and aggregates the information based on a pre-configured media packet length threshold; col. 5, lines 13-24]; and

transmitting said aggregated data packet over the communication channel to the receiving node, for de-aggregation of the aggregated data packet at the receiving node **[Fig. 2; A transmitting VoIP POP 215 transmits the aggregated data packets to a receiving VoIP POP 215 for de-aggregation of the aggregated data packets via IP WAN 217].**

Mohaban does not expressly teach a size of the aggregated data packet is determined through a negotiation between the transmitting node and a receiving node based at least in part on user service requirements associated with at least one of the end user, the communication channel, and the data packets.

Davenport teaches a size of the aggregated data packet is determined through a negotiation between the transmitting node and a receiving node based at least in part on user service requirements associated with at least one of the end user, the communication channel, and the data packets **[Abstract: The packet size is selected in response to the communication link quality, a service requirement; Fig. 2, steps 46-52; pars. 0016, 0019, 0021, 0022].**

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Mohaban's aggregation/de-aggregation protocol by incorporating the capability of packet size selection or negotiation between the transmitting and the

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receiving devices based on the service requirements, such as the communication link quality, as taught by Davenport.

The motivation for combining the reference teachings would allow a VoIP POP to aggregate/de-aggregate the size of packets not only based on the packet header/payload compression but also on the user service requirements, such as the communication link quality.

Regarding claim 21, Mohaban teaches, at the receiving node, de-aggregating the aggregated data packet to form a plurality of de-aggregated data packets **[Fig. 2; VoIP POP 215 de-aggregates data packets received from IP WAN 217]**, said de-aggregated data packets corresponding to the data packets previously aggregated into the aggregated data packet at the transmitting node **[Fig. 2; VoIP POP 215 de-aggregates data packets received from IP WAN 217, which were aggregated at the transmitting node based on the aggregating protocol; col. 3, lines 30-46]**; and

buffering the de-aggregated data packets **[Fig. 2; A buffer is inherent in Router 221 which is coupling to the input of (De-) Aggregator 219]**.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 9 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 7,002,993 to Mohaban et al. (hereinafter "Mohaban"), in view of US Patent Application Pub. No. 2003/0091017 A1 by Davenport et al. (hereinafter "Davenport"), and further in view of US Patent No. 6,839,356 to Barany et al. (hereinafter "Barany").

Regarding claims 9 and 19, Mohaban, in view of Davenport, teaches each limitation set forth in its parent claim.

Mohaban, in view of Davenport, does not expressly disclose the aggregator performs channel coding and modulation on the aggregated data packets.

Barany teaches the aggregator performs channel coding and modulation on the aggregated information and the information is encoded prior to being aggregated **[Fig. 2; VoIP G/W 208 comprises an AMR Codec]**.

It would have been obvious to a person of ordinary skill in the art at the time of the invention to incorporate a codec into Mohaban's VoIP POP 215/VoIP Gateway 220 to perform the channel coding and modulation on the aggregated information.

The motivation for combining the reference teachings not only would allow a VoIP POP to aggregate multiple media packets to improve end-to-end efficiency, but also enable VoIP POP to use a serving Adaptive Multirate (AMR) coder/decoder (AMR

CODEC) to efficiently code and decode the VoIP payload using a minimum resource set.

Response to Arguments

4. Applicant's arguments with respect to claims 1-22 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Albert T. Chou whose telephone number is 571-272-6045. The examiner can normally be reached on 8:30 - 17:00.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi H. Pham can be reached on 571-272-3179. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Albert T. Chou

August 7, 2007

Ac


CHI PHAM
SUPERVISORY PATENT EXAMINER
8/9/07